

What Is Claimed Is:

1. A variegated polymeric article comprising:
a tinted substrate; and
a substantially clear capstock layer applied onto said tinted substrate, said substantially clear capstock layer having a plurality of accent color streaks and a polymeric capstock material.
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2. The variegated polymeric article of claim 1, wherein said polymeric capstock material comprises a substantially clear, ultraviolet light resistant polymeric capstock material coextruded on to said substrate.
3. The variegated polymeric article of claim 2, wherein said
10 polymeric capstock material comprises a methacrylic acid based resin material.
4. The variegated polymeric article of claim 3, wherein said methacrylic acid based resin material is selected from the group consisting of Acryligard CS-103 and TufCoat 4840.
- 15 5. The variegated polymeric article of claim 4, wherein said article has a visible color, and said substrate provides substantially all of the visible color of the article, and said capstock provides no significant contribution to the visible color.
6. The variegated polymeric article of claim 5, wherein said
20 substrate comprises a PVC-based substrate.
7. The variegated polymeric article of claim 5, wherein said methacrylic acid based resin material is substantially free of titanium dioxide.
- 25 8. The variegated polymeric article of claim 7, wherein said methacrylic acid based resin material is selected from the group consisting of Acryligard CS-104 and TufCoat 5000.

9. The variegated polymeric article of claim 3, wherein said methacrylic acid based resin material is substantially free of titanium dioxide.

10. The variegated polymeric article of claim 9, wherein said methacrylic acid based resin material having a small percentage of titanium dioxide is selected from the group consisting of Acryligard CS-104 and TufCoat 5000.

11. The variegated polymeric article of claim 3, wherein said polymeric capstock material comprises a methacrylic acid based resin material having a small percentage of titanium dioxide.

12. The variegated polymeric article of claim 11, wherein said methacrylic acid based resin material having a small percentage of titanium dioxide is selected from the group consisting of Acryligard CS-104 and TufCoat 5000.

13. The variegated polymeric article of claim 1, wherein said tinted polyvinyl chloride based substrate comprises a homogeneous mixture of a polyvinyl chloride material and at least one pigment material.

14. The variegated polymeric article of claim 1, wherein said accent color streaks are formed from streaker pellets, said streaker pellets comprising an organic carrier resin and at least one weatherable pigment material, wherein said organic carrier resin is compatible with said polymeric capstock material.

15. The variegated polymeric article of claim 14, wherein said streaker pellet comprises Variegated Color Concentrate.

16. The variegated article of claim 1, wherein the variegated polymeric article comprises a variegated siding panel.

17. A method for forming a variegated polymeric article having deep coloration and ultraviolet light resistance, the method comprising:

forming a tinted polyvinyl chloride based substrate material within a first extruder;

forming a substantially clear capstock material within a second extruder, said capstock material having a substantially encapsulated weatherable pigment material;

forming a web material having a first layer of said substrate material and a second layer of said capstock material; and

forming the variegated polymeric article from said web material within a post forming section.

18. The method of claim 17, wherein forming said substantially clear capstock material layer comprises:

introducing a mixture of a powdered or pelletized polymeric capstock material and a plurality of streaker pellets to the second extruder, said streaker pellets comprising an organic carrier resin and an weatherable pigment material;

mixing said mixture with a first zone of said second extruder at a first temperature, said first temperature greater than the melting point of said polymeric capstock material and less than the melting point of said organic carrier resin;

further mixing said mixture with a second zone of said second extruder at said first temperature;

further mixing said mixture within a third zone of said second extruder at a second temperature, said second temperature at or slightly below the melting point of said organic carrier resin; and

further mixing said mixture within a fourth zone of said second extruder at a third temperature, said third temperature sufficient to melt said organic carrier resin such that said melted organic carrier resin and said melted polymeric capstock material substantially encapsulates said weatherable pigment material.

19. The method of claim 18, wherein said first temperature is below approximately 340 degrees Fahrenheit.

20. The method of claim 18, wherein said second temperature is between approximately 310 and 360 degrees Fahrenheit.

5 21. The method of claim 18, wherein said third temperature is between approximately 325 and 380 degrees Fahrenheit.

22. The method of claim 17, wherein forming a tinted polyvinyl chloride based substrate material layer comprises:

10 introducing a mixture of a powdered polyvinyl chloride material and a plurality of color feeder pellets into said first extruder; and mixing said mixture into a viscous homogeneous mixture.

23. The method of claim 17, wherein forming said web material comprises:

15 introducing said tinted polyvinyl chloride based substrate material and said substantially clear capstock material to a coextruder die;

forming a hot, viscous web material having a first layer of said tinted polyvinyl chloride based substrate material and a second layer of said substantially clear capstock material such that a plurality of accent color streaks are formed within said second layer.

20 24. The method of claim 17, wherein said polymeric capstock material comprises a methacrylic acid-based resin.

25. The method of claim 24, wherein said methacrylic acid based resin is selected from the group consisting of Acryligard CS-103 and TufCoat 4840

26. The method of claim 17, wherein said polymeric capstock material comprises a methacrylic acid-based resin having a small percentage of titanium dioxide.

27. The method of claim 26, wherein said methacrylic acid
5 based resin having a small percentage of titanium dioxide is selected from the group consisting of Acryligard CS-104 and TufCoat 5000.

28. The method of claim 23, wherein forming the variegated polymeric article from said web material within said post forming section comprises forming the variegated siding panel from said web material within said
10 post forming section.

29. The method of claim 28, wherein forming the variegated siding panel from said web material within said post forming section comprises:
removing said web material from said coextrusion die;
embossing a clear capstock layer side of said web material;
15 cooling said web material;
vacuum drawing said web material in a calibrator to a desired size and dimension;
further cooling said web material; and
further processing said web material to form said variegated siding
20 panel.

30. The method of claim 23, wherein further processing said web material comprises:
perforating said web material;
pulling said web material to a desired shape; and
25 cutting said web material to a desired size to form said variegated siding panel.

31. A method for forming a clear capstock layer having accent color streaks for use in a variegated polymeric article comprising:

introducing a dry mixture of a powdered or pelletized polymeric capstock material and a plurality of streaker pellets to an extruder, said streaker pellets comprising an organic carrier resin and an weatherable pigment material;

5 mixing said dry mixture within a first zone and a second zone of said extruder at a first temperature, said first temperature greater than the melting point of said polymeric capstock and less than the melting point of said organic carrier resin;

further mixing said dry mixture within a third zone of said extruder at a second temperature, said second temperature at or slightly below the melting
10 point of said organic carrier resin; and

further mixing said dry mixture within a fourth zone of said extruder at a third temperature, said third temperature sufficient to melt said an organic carrier resin such that said melted organic carrier resin and said melted capstock material substantially encapsulates said weatherable pigment material.

15 32. The method of claim 31, wherein said first temperature is below approximately 340 degrees Fahrenheit.

33. The method of claim 31, wherein said second temperature is between approximately 310 and 360 degrees Fahrenheit.

20 34. The method of claim 31, wherein said third temperature is between approximately 325 and 380 degrees Fahrenheit.

35. The method of claim 31, wherein said first temperature is below approximately 340 degrees Fahrenheit, said second temperature is between approximately 310 and 360 degrees Fahrenheit; and said third temperature is
25 between approximately 325 and 380 degrees Fahrenheit.

36. A polymeric article comprising:
a tinted substrate; and

a substantially clear capstock layer coextruded onto said tinted substrate, said substantially clear capstock layer comprising a substantially clear, ultraviolet light resistant polymeric capstock, said substantially clear, ultraviolet light resistant polymeric capstock being compatible with said tinted substrate.

5 37. The polymeric article of claim 35, wherein said substantially clear, ultraviolet light resistant polymeric capstock comprises a methacrylic acid based resin material.

 38. The polymeric article of claim 36, wherein said methacrylic acid based resin material is selected from the group consisting of Acryligard CS-
10 103 and TufCoat 4840.

 39. The polymeric article of claim 35, wherein said substantially clear, ultraviolet light resistant polymeric capstock comprises a methacrylic acid based resin material having a small percentage of titanium dioxide.

 40. The polymeric article of claim 35, wherein said substantially
15 clear, ultraviolet light resistant polymeric capstock comprises a methacrylic acid based resin material having substantially no trace of titanium dioxide.

 41. The polymeric article of claim 38, wherein said methacrylic acid based resin material having a small percentage of titanium dioxide is selected from the group consisting of Acryligard CS-104 and Tuf Coat 5000.

20 42. The polymeric article of claim 35, wherein said tinted substrate comprises a homogeneous mixture of a polyvinyl chloride material and at least one pigment material.

 43. The polymeric article of claim 36, wherein said substantially clear capstock layer further comprises a plurality of accent color streaks formed
25 within said substantially clear capstock layer.

44. The polymeric article of claim 43, wherein said accent color streaks are formed from a plurality of streaker pellets, each of said streaker pellets comprising an organic carrier resin and at least one weatherable pigment material, wherein said organic carrier resin is compatible with said substantially clear,
5 ultraviolet light resistant polymeric capstock.

45. The polymeric article of claim 44, wherein said streaker pellets comprise Variegated Color Concentrate.

46. The polymeric article of claim 45, wherein said substantially clear capstock layer is formed within an extruder having a staggered temperature
10 profile.

47. The polymeric article of claim 46, wherein said staggered temperature profile comprises:

a first zone of said extruder at a first temperature, said first temperature greater than the melting point of said substantially clear, ultraviolet
15 light resistant polymeric capstock and less than the melting point of said organic carrier resin;

a second zone of said extruder at or above said first temperature;

a third zone of said extruder at a second temperature, said second temperature at or slightly below the melting point of said organic carrier resin; and

20 a fourth zone of said extruder at a third temperature, said third temperature sufficient to melt said organic carrier resin such that said melted organic carrier resin and said melted substantially clear, ultraviolet light resistant polymeric capstock substantially encapsulates said weatherable pigment material to form a substantially clear capstock material.

48. The polymeric article of claim 36, wherein said tinted substrate is formed by:

introducing a mixture of a powdered substrate material and a plurality of color feeder pellets into an extruder; and

extruding said mixture into a viscous homogeneous mixture to form a tinted substrate.

49. The polymeric article of claim 48, wherein said substantially clear capstock layer is formed by:

5 introducing a powdered or pelletized, substantially clear, ultraviolet light resistant polymeric capstock to a second extruder; and
 melting said polymeric capstock to form a substantially clear capstock layer.

50. The polymeric article of claim 49, wherein the polymeric
10 article is formed by:

 introducing said tinted substrate and said substantially clear capstock layer to a coextrusion die; and
 introducing said substantially clear capstock layer onto said tinted substrate within said coextrusion die.

51. The polymeric article of claim 36, wherein the polymeric
15 article comprises a siding panel.